

1 US PATENT OFFICE, SPECIFICATION, PROFESSIONAL COLLABORATION NETWORKS - RAJASINGHAM, MARCH 2003.

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5 **PATENT APPLICANT**

6 A.I.Rajasingham, 6024 Bradley Boulevard, Bethesda, MD 20817

8 **TITLE OF INVENTION:** Professional Collaboration Networks

10 **CROSS REFERENCE TO RELATED APPLICATIONS:** US 60/450,682

11 **STATEMENT REGARDING**

12 **FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT:** Not Applicable

14 **REFERENCE TO A MICRO FICHE APPENDIX:** Not Applicable

16 **BACKGROUND OF INVENTION**

17 **FIELD OF INVENTION**

18 Generation of entities to create economic value as in corporations , represent the aggregation of
19 complementary skills and visions that create products that are expected to have a value to a set of markets
20 that is greater than the cost of the utilization of all of the constituent participants and the resources
21 brought to bear on the products. In the past these entities were largely created by manual seaches for
22 suitable conadidates in each functional area dn industry area required for the product by entrepreneurs
23 who used largely informal networks for this process.

24 The present invention creates a new paradigm for the creation of economic value generating entities by
25 using Trust networks and Professional Networks. In many embodiments of the invention, these Trust and
26 Professional networks are created by aspects of the invention.

27 **SUMMARY**

28 **OBJECTS & ADVANTAGES**

29 The objects and advantages of the present invention relate to the creation of
30 entities that can generate economic value by utilizing the structure and content of communications
31 among members of networks that are created both for social and professional interaction. Such
32 economic value in the present invention may for example relate to the creation of business entities or a

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1 new approach for matching job seekers to job offerings with information in normal interactions
2 between members on one or more networks. The invention defines a new approach to creating the
3 environment for such communications and also provides a process that uses existing networks as inputs
4 for the process.

5 BRIEF DESCRIPTION OF DRAWINGS

6 Figures 1-35 provide slides that represent the process for building an example of the present
7 invention.

8 Fig 3, illustrates possible layers in networks.

9 Fig 4, illustrates the formation of a Trust layer based on personal communications. Forums
10 are usually social networks.

11 Fig 5, shows an example of a screen where the personal postings can be made in a Trust
12 network of choice. If Trust Network is outside the PCN a fee can be charged by outside network for information
13 on postings.

14 Fig 6 shows a Professional layer where reputations are generated with postings.

15 Fig 7 shows routine professional postings that can indicate specialty or field and sub field.
16 Fees can be due for postings that solve problems posted by originators. Postings generate a reputation.

17 Fig 8 Shows a visualization of a posting that has components in multiple fields that make it
18 easy for members to choose to respond to the field profiles that they have competence in.

19 Fig 9 Shows first level responses to the postings in Fig 8. They could each have different
20 components in different fields.

21 Fig 10, A second respondent could have still different components of his/her response,
22 therefore beginning to create a trajectory of field strengths along thread.

23 Fig 11, is a representation of multiple threads that can evolve from a first post each with
24 different field strengths at each step. The Threads that end could have high information content of the poster.

25 Fig 12, shows that a single member can be in many PCNs

26 Fig 14, shows an Entrepreneur/originator/contract writer defining contracts and
27 broadcasting needs for legal structure for example

28 Fig 15, example of what could be specified by the originator/contract writer.

29 Fig 17, the next step in creating a venture would be to get people that will have the right
30 profiles

31 Fig 18, example of professional requirements

32 Fig 19, Bids back to the entrepreneur/originator/contract writer.

33 Fig 20, Choice screen for bids

34 Fig 22, trust /diligence process begins

35 Fig 23, Trust layer for diligence. References (possibly for a fee) for multiple levels
36 chaining back along several links to the Originator/Entrepreneur/Contract Writer creating a complete connection
37 thread. And then chaining forward on complete connection threads.

38 Fig 24, Professional Evaluation. See Fig 8,9,10 for cross reference.

39 Fig 25, Professional Evaluation with external experts.

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- 1 Fig 26, Referee competence example of representation.
- 2 Fig 28, Action of the originator to respond to bids
- 3 Fig 30, PCN for using diligence information for raising capital
- 4 Fig 31, The PCN screens for a VC or investor.
- 5 Fig 34,35 Examples of implementation aspects.

DETAILED DESCRIPTION OF INVENTION

The present invention either uses a preexisting professional community or creates one or more such communities using the specialization and preferences of the members. These networks can result from professional organizations such as professional societies such as IEEE or Colleges and classmates in particular fields, Alumni of colleges, colleagues in profitable organizations, university staff and faculty etc. This forms the professional layer of the communities. There is in addition a Trust layer of the community that is created by the interaction of members of one or more networks that relate to personal relationships from prior or current contact in organizations or physical locations such as colleges, universities, alumni groups, companies, professional organizations, schools etc. The Trust Layer (TL) and the Professional Layer (PL) are parts of the Professional Collaboration Network (PCN)

The classification of the members into functional areas relevant for economic activity and industry groupings relevant for creating economic value is done to help focus dialog in the professional networks. Similarly the Trust networks get focus by segmentation into the relevant groups that are interested in a dialog. For example class groups in an alumni Egroup.

The professional networks may have a range of classification mechanisms for the threads of discussion and dialog that flows through the network. One example would be an item for posting in the professional network be classified by the originator to have a component in one or more industry field and at least one functional area that is relevant for the posting. As responses are generated to the initial posting, respondents are allowed to provide new combinations of the industry weightings for the response and the functional area if different to the original posting. This will allow a tree of responses to develop where any branch of the tree may have a particular industry orientation with more industry specialists targeting a response. The model can have fees for responses to the postings made by the PCN and partly paid to respondents. However, this may not be necessary as, another model can use the desire of the participants to create a reputation to drive their interest providing inputs. The originator may provide inputs on the relevance of the responses in resolving the issue originally posted.

These professional networks keep functioning to address specific queries of members and may have economics of their own in providing incentives for respondents. However, in addition they create a record of competence for each of the participants. This record can take many forms depending on the structure that is created for the interaction and the definition of the threads of

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1 discussion. Some examples are provided in the figures but they are by no means complete in terms of
2 such structures. When a new venture or other entity is contemplated by an entrepreneur or even a
3 existing entity that has job vacancies, such professional networks can be queried to provide the
4 competence record of the members.

5 In the past such "references" came from a forward search among individuals
6 known to the originator of the search. Then to take advantage of the economies of scale in the
7 relationships in each field search firms were set up to use relationships that can be reused for new
8 relationships. Such search firms manifested themselves to some extent in Venture Capital Companies
9 that used relationships in their data banks to create economic value over and above the capital they
10 provided. The present invention provides a more powerful paradigm as both forward and backward
11 searches may be conducted in the networks and the infrastructure for transactions may even be designed
12 to provide the right parameters for measuring the performance of members when there is a search of a
13 new business entity conducted by an entrepreneur or a job posting for a company.

14 In a similar vein there is a need for trust relationships or "personal references"
15 for generating new relationships in a business venture or for that matter in hiring decisions. The
16 structure of interactions in networks can be harnessed to provide key information in terms of the
17 relative strength of relationships such as derived from the frequency of interaction between members or
18 of interaction of members to groups that are responded to by other members. Such linkages can be
19 connected to get a set of relationships with the Entrepreneur or other searching party (E) and then a
20 forward search from E conducted right through to the possibly several paths to the subjects of the
21 search. There can also be information on the nature of the relationships in the networks that are made
22 available.

23 There is an issue of intrusion into privacy of the members. However, there can be
24 disclaimers designed for members on entry to allow such information to facilitate such processes that
25 such members can be beneficiaries of. For example, they could be paid by the PCN for allowing their
26 interactions to be used in a search.

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29 The above structure can be used as noted in a passive manner for a record of past actions of members of the PCN
30 to provide inputs in a search. In addition there can be active interactions of members on request by the PCN for
31 additional information or economic exchange. For example there can be referees at different levels as shown in
32 the figures for both the TL and the PL that can be paid by the PCN or another agent through the PCN. In
33 addition members who are knowledgeable about performance of members in a search may choose to provide
34 performance guarantees to the searching party through the PCN thereby providing greater confidence to the E.
35 Often such guarantees are more credible if underwritten by a credible financial institution. Such arrangements
36 and the guarantee arrangements along with legally binding agreements in the relevant jurisdictions and locations
37 of the members for all economic transactions may be generated and executed by the PCN.

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1 The process of creation of a new venture by an E may start with the PCN providing a forum of Intellectual
2 Property legal firms that offer services to the PCN member (potentially for a fee to the PCN). The E can then
3 decide on one of these and then set up the IP requirements before creating a legal entity for operating the venture.
4 (such as a corporation or LLC etc) Again this can be done through a set of legal entities that provide such set up
5 services in different jurisdictions available on the PCN (potentially for a fee to the PCN). Once the business plan
6 is created by E (again resources for this can be provided through sets of consultants who execute non disclosures
7 and operate through PCN for a fee as in the last two steps), there is a need to find members of a team for the
8 venture. The PCN provides the channels for posting requirements, bidding for the process and providing the
9 diligence and then finalizing the arrangements (all for a fee which can include equity in the entity, wage based
10 compensation or other claims on the economic value created by the transaction)

11 Initially the E posts the requirements for each participant in the intersection of the relevant industries and the
12 relevant functional areas. Reservation equity or wages or other terms may be provided to be explicit or available
13 only on meeting the conditions for reservation being met. The respondents bid with identities and any additional
14 information they wish to provide and granting permission if they choose to allow E to go through a diligence
15 process on PCN.

16 The E then may go through both a Trust evaluation and a Professional evaluation of the candidates. One or more
17 Trust Layers (TL) that the respondent is a member are notified of the member's interest and references are
18 solicited. Such referees are backward chained to second, third and higher level references till a known or trusted
19 party is found as a referee at some nth level trusted by the E. This will then permit a forward chaining of
20 verification of trust relationships in the paths to the respondent from the E. All members connected together by a
21 chain of linkages between pairs of members are part of a connected network. Every unique path along linkages
22 between pairs of members with no linkage traversed twice is a connection thread.

23 A parallel channel would be the utilization of the strength of communication relationships which may be
24 established with the frequency of communication between members or other criterion related to the strength of
25 relationships between members. Such communications may be backward chained till the E is reached and then
26 then the E may choose to forward chain to verify the subject through the network. Notably, the communication
27 network may be based on direct communications or communications to a sub network of any of the TLs and the
28 response of other members to that communication.

29 Guarantees may also be provided for a fee with specific defined criteria that are triggers for payment.

30

31 Similarly the diligence process for Professional performance may be conducted with the E viewing (potentially
32 for a fee) a communications distribution of the subject in the space of industries and the space of functional areas.
33 He may click or otherwise select a point or a region of the space to investigate the competence of the subject.
34 Such a selection may give the postings that the subject has made in the local neighborhood of the selection (the
35 E can choose the size of the neighborhood) these postings will be classified in terms of the functional focus and
36 industry focus and the context of each of these in terms of the trajectory of the prior and following postings in the
37 thread in these spaces. It may also give the position on the tree of communications following the initial posting
38 for each of these communications, to establish the relevance (early termination of a tree may be because an
39 answer has been reached or because the branch has become irrelevant).

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- 1 Further more the E can broadcast a request for referees that inhabit the neighborhoods that E has selected to
2 provide references on the subject. PCN can provide a network of experts to evaluate the referees remarks or the
3 subject.(for a fee. The experts may also be paid by PCN or be retained simply by generating a reputation for
4 themselves) The bidder/subject will normally be informed of the request for references and the referees identities
5 and be allowed to provide a perspective on that referee either positive or negative that is available to the E when
6 evaluating the referee inputs.
- 7 There can be 2nd 3rd or higher order referees which can be evaluated by E or by experts. It is also possible to have
8 first order referees to stay anonymous as long as they provide second order referees that evaluate them to
9 disclose their identities. This arguen tmay be carried to multiple levels of anonymous referees.
- 10 There may also be a background process for establishing the reputation of referees in providing accurate inputs
11 by correlating the positive references to positive decisions by E or in the case of multiple level referees the next
12 higher level referee success in prediction (chained back from the success of the E)
- 13 Any of the referees can also provide guarantees as in the TL related to a specific predefined trigger criterion to
14 help the E in a decision.
- 15 The E may then finalize decisions on the bidders and if necessary counter offer and receive responses any
16 number of times through PCN and arrive at a decision possible after meeting with the bidders.
- 17 The PCN may get a fee based on economic value of the entity created that may be equity or other claim on the
18 entity such as a senior claim as in preferred shares etc or simply contingent claims on performance
- 19
- 20 The next step is to attract finance to the entity. Here again the PCN may have a forum of investors that may be
21 Venture Capitalists or Angel investors etc. Upon request by E to the Financier, the Financier may initialize a
22 diligence process on PCNs that he is a member of to check each of the participants. The process is analogous to
23 the process conducted by E for theother participants.
- 24 PCN can charge a different fee for this service to capital providers.
- 25 A second factor for this stage of the process is that the E can use the information that he has got in the diligence
26 process he has conducted to selectively present what he chooses to the financier.
- 27